**Developing a Hypothesis**

A hypothesis is a statement about some real-world phenomenon that can be tested through observation and experimentation. It is a proposition that suggests that one thing will result in some effect on or change in another.

**Step 1 – Select a Topic**

Subject area you’d like to research.

***Example*** *– Effects of caffeine on different populations*

**Step 2 – Read existing research**

Gather all the information you can about the topic you've selected. You'll need to become an expert on the subject and develop a good grasp of what is already known about the topic.

Focus on academic and scholarly writing. You need to be certain that your information is unbiased, accurate, and comprehensive.

***Example:*** *Learn how caffeine affects the body. Read studies testing caffeine’s effect on people.*

**Step 3 – Analyse the literature**

Spend some time reading the materials you've collected. As you do so, look for and make note of unanswered questions in the literature. These can provide excellent ideas for areas to investigate.

Come up with questions no one has answered. Look for statements suggesting future research.

***Example*** *– A recent study calls for researching caffeine’s effect on women.*

**Step 4 – Generate questions**

Fill gaps in the existing literature

Useful or interesting topics

***Example*** *– Does caffeine effect women and men differently?*

**Step 5** - **Look for clues as to what the answer might be.**

Once you've generated your research question or questions, look to see if the existing findings and/or theories about the topic provide any clues that would allow you to make an educated guess as to what the answers to your research questions might be. If so, this will form the basis for your hypothesis.

**Formulating Your Hypothesis**

**Step 1 – Determine Your Variables**

One independent variable: the factor you’ll be testing

Dependent variable(s): the effect(s) you think will change

***Example***

*Independent variable: the sex of the subject (male or female)*

*Dependent variable: change in the heart rate after caffeine*

**Step 2 – Generate a general hypothesis**

***Example*** *– Caffeine will affect male and female heart rates differently*

**Step 3 – Make it Directional if possible**

Your best guess at the factor’s effect

***Example*** *– Caffeine will increase heart rate in women more than men*

**Step 4 – Get Specific**

Make your hypothesis as specific as you can, so it's clear exactly what ideas you will be testing and what would provide evidence of a relationship between the variables

Where necessary, specify the population (i.e. the people or things) you hope to uncover new knowledge about.

For example, if you were only interested the effects of caffeine on elderly people, your hypothesis might read: "Women over the age of 65 will experience a greater increase in heart rate than will men of the same age."

**Step 5 – Make sure it is testable**

Your hypothesis must suggest a relationship between two variables that can feasibly be observed and measured in the real world.

For example, you would not want to make the hypothesis: "older people think differently." This hypothesis does not specify who counts as "older," who they are supposed to think differently than, or how would know whether or not their thoughts were "different." As a result, this hypothesis cannot be supported or rejected based on real world observations.

**Step 6 – state your hypothesis formally**

***Examples***

* The number of deaths attributed to preventable illness is significantly higher in Asia in comparison to the rest of the world.
* Ebola has killed more people than any other illness, over the last 50 years.
* Australian education standards have increased over the last 20 years.